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HP | Kayak XU800 | PC Workstations

Ultimate-Performance Dual-Processor PC Workstations at Attractive Prices

Technical Datasheet

TopTools

HP MaxiLife

HP DUAL EXPRESS

PC WORKSTATIONS THAT DELIVER

In the highest-performance PC computing environments, business and technical professionals are demanding ever-greater computing muscle, ever-higher capability, ever-faster I/O, and ever-sharper graphics. For these power users, Hewlett-Packard introduces the HP Kayak XU800 PC Workstations—ultimate-performance desktops that:

... Set a new standard for speed

The HP Kayak XU800 is the fastest PC Workstation on the market. Starting with Intel's speediest Pentium® III 733 MHz, 800EB MHz, 866 MHz, or 933 MHz processor with support for optional dual processing; the latest Intel® 840 chipset with 133 MHz front side bus; and a 64-bit, 66 MHz PCI bus. This overachiever offers a host of additional features to take speed and performance to even greater heights. Highly efficient 32-bit Rambus® direct (RDRAM®) memory architecture and both Ultra 160 SCSI and Ultra2 SCSI capabilities deliver the fastest possible data transfer and blazing disk speeds. This performance desktop incorporates a 10/100 Base-T PCI LAN interface for easy network integration. To complete the picture, choose from a wide range of graphics solutions to suit every high-performance computing environment—best value professional 2D graphics; best professional 2D performance in a dual-head solution (also occupying just one AGP slot); professional OpenGL for technical and commercial 3D applications; or for those real "power users", expert OpenGL 3D.

... Raise the bar on manageability

The HP Kayak XU800 PC Workstation is a new breed of ultimate-performance desktop that not only delivers on performance, but also offers newly enhanced manageability and even greater ease of service to help boost productivity and reduce total cost of ownership. HP's first-to-market, full-featured, Web-based desktop management application, HP TopTools—not to mention the industry's most comprehensive implementation of the DMI (Desktop Management Interface) standard—comes with every model, enabling advanced management of hardware, inventory, configuration, passwords, security, and power, along with worry-free remote maintenance and software updates. Significant cost savings come from a new package that's optimized for ease of access and installation. HP MaxiLife, HP's dedicated hardware management system with a newly updated, backlit LCD display, provides advanced diagnostics. And, finally, HP PC Image Engineer enables fast, customized software installation.

... Deliver unmistakable value

HP is dedicated to delivering top value for your PC Workstation investment—and our latest PC Workstation is no exception. That's why we offer this ultimate-performance desktop at an attractive price. What's more, the HP Kayak XU800 PC Workstation will hold its value. Its outstanding flexibility and scalability—and a wide range of upgrade options and accessories, including a dual-processing upgrade kit that features HP's exclusive upgrade tool, HP DualExpress!—allow you to add capabilities as needed to meet your most demanding performance, storage, communication, and multimedia needs. And finally, in keeping with HP's long-standing reputation for quality and reliability, you can rest assured this PC Workstation is designed and built for lasting service. So no matter what opportunities the new millennium offers, the HP Kayak XU800 PC Workstation is the tool you'll need to make the most of them.

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AT A GLANCE

New Technology Highlights:

- New Intel® Pentium® III 733 MHz, 800EB MHz, 866 MHz, or 933 MHz processor with 133 MHz front side bus (FSB) and system architecture based on Intel's 840 chipset.
- All models dual-processing ready.
- 128 MB or 256 MB PC800 error checking and correcting (ECC) Rambus® direct memory (RDRAM®), expandable to 1 GB.
- Superfast 10,000rpm Ultra 160/m SCSI hard disk drive with Ultra 160/m SCSI controller on-board; Ultra2 SCSI controller optional.
- Choice of advanced graphics solutions:
  - Best-value 2D—Matrox Millennium G250 AGP 2X with 8 MB memory.
  - Best 2D—Matrox Millennium G400 Dual AGP 2X/4X with 16 MB memory and dual-monitor support.
  - Professional 3D—ELSA Synergy II AGP 2X/4X with 32 MB memory.
  - Expert 3D—ELSA Gloria II AGP 2X/4X with 64 MB memory.
  - Expert 3D—3Dlabs Oxygen GVX1 AGP 2X OpenGL with 32 MB memory.
- Open OS models available:
  - TurboLinux CD kit provided, not preloaded.
- Wide range of optical storage devices:
  - HP 48X Max-speed IDE CD-ROM drive.
  - HP 8X Max-speed IDE DVD-ROM drive with video playback and DVD-RAM compatibility.
  - HP 4X Max-speed IDE CD-Writer Plus drive.
- HP MaxiLife system for advanced diagnostics.
- HP TopTools and DMI for desktop and remote manageability.
- HP PC Image Engineer Software Deployment and Recovery Tool.
- HP PCI 10/100Base-T Ethernet adapter with LAN Remote Power On/Off.
- New multimedia keyboard with Web browser hot key puts the Internet at your fingertips.

PC SYSTEM FEATURES

Package	• Expandable minitower package. • HP Improved Multimedia Keyboard. • HP Scrolling Mouse. • HP Three-Button Mouse (on model with 3Dlabs Oxygen GVX1 graphics). • Support for three 10,000rpm Ultra 160/m SCSI or ATA/66 IDE hard disk drives. • HP UltraFlow cooling system for optimal PC Workstation cooling. • HP MaxiLife system diagnostics with backlit front-panel LCD message display.
Processor	• Intel® Pentium® III 733 MHz, 800EB MHz, 866 MHz, or 933 MHz processor with 133 MHz front side bus (FSB). • Dual PCI bus: 64-bit, 66 MHz plus 32-bit, 33 MHz. • Support for Intel® Multiprocessor Specification (MPS) 1.4 for dual-processor technology.
Chipset	• Intel® 840 chipset.
Memory	• 128 MB or 256 MB PC800 ECC Rambus® direct RAM (RDRAM®), expandable to 1 GB through four RIMM™ slots. • Error checking and correcting (ECC) for detection and correction of 1-bit errors and detection of 2-bit errors.
Hard disk drive	• Choice of hard disk drive technologies: — 9.1 GB (7200rpm or 10,000rpm) or 18.0 GB (10,000rpm) Ultra 160/m SCSI. — 15.0 GB or 30.0 GB (7200rpm) Ultra ATA/66. ***Note:*** All hard disk drives are SMART compliant.
Hard disk controller	• Integrated Ultra 160/m SCSI controller on the 64-bit, 66 MHz PCI bus with support for internal and external SCSI peripherals. • Optional PCI Ultra2 SCSI controller with support for internal and external SCSI peripherals. • Two PCI Bus Master Ultra ATA/66 channels for up to four internal IDE devices. • Optional Ultra2 SCSI RAID PCI card with support for external and internal connections.
Floppy disk drive	• Third-height, 3.5-inch, 1.44 MB floppy disk drive preinstalled.
Optical storage	• Choice of optical storage solutions: — HP 48X Max-speed IDE CD-ROM drive. — HP 8X Max-speed IDE DVD-ROM drive. — HP 4X Max-speed internal IDE CD-Writer Plus drive (Adaptec Easy CD Creator and DirectCD software included).
Mass storage shelves	• Seven shelves: — One front-accessible with standard, third-height floppy drive preinstalled. — One front-accessible, third-height for additional accessory. — One front-accessible, half-height with 5.25-inch Optical Device preinstalled. — Two front-accessible, half-height, 5.25-inch for additional devices. — Two internal, third-height, 3.5-inch for hard disk drives (one preinstalled, one available).
Total expansion slots	• Six full-length slots: two PCI 64-bit, 66 MHz; three PCI 32-bit, 33 MHz; one AGP 4X Pro 50W — Maximum of five PCI slots. — PCI 2.2 compliant.

PC SYSTEM FEATURES

Audio subsystem	• Integrated, digital, high-fidelity, on-board, 16-bit stereo audio. • MPC-3 and Direct Sound III compatible. • Full duplex operation—to record and play at the same time. • Hardware FM synthesizer—to play MIDI files with general MIDI table in hardware. • Sample rate converter mixer—to play audio files with different sample rates simultaneously. • Audio ports in rear: headset, microphone, audio in, MPU-401 MIDI input/output interface. • Audio ports on multimedia keyboard: headset, microphone. • Built-in speaker and on-keyboard ergonomic volume control.
Built-in I/O	• One 25-pin parallel port (ECP bidirectional Centronics supporting IEEE 1284). • Two 9-pin serial ports (16550 UART). • Mini-DIN keyboard and mouse ports. • One MIDI/joystick connector. • Audio ports (line-in, line-out, microphone-in, speaker-out). • One VESA feature connector for VGA pass-through. • One 15-pin VGA connector (two on models with Matrox Millennium G400 Dual graphics). • Two stacked Universal Serial Bus (USB) ports. • One external, high-density SCSI port. • One RJ-45 Ethernet connector.
Multimedia keyboard	• PS/2 keyboard with Windows® StartKey (104-105 keys). • Plugs to connect headset and microphone directly to keyboard. • Color-coding support: — PS/2 keyboard connector—purple (2517C). — Audio jacks: microphone—pink (701C). Headset—lime green (577C). • Additional configurable hot keys for: — Sound management—volume control and mute. — Security management—lock key to lock your Windows NT® Workstation. — Utility management—shortcut to HP TopTools. — Application management—shortcuts to favorite applications, including Internet browser and office applications. — Messaging management—blinking LED to warn of incoming messages; associated hot key to launch messaging application. — Keyboard management—direct access to hot key configuration tool. • Power-on space bar lets you power on your PC without reaching for the on/off switch.
Upgradability	• BIOS in flash EEPROM for convenient BIOS upgrades. • System memory upgradable using ECC RDRAM® RIMMs™. • Second processor upgradable.

MATROX MILLENNIUM G250 GRAPHICS

Graphics processor

- Matrox Millennium G250 graphics card installed in AGP slot:
  - — Best price/performance 2D graphics.
  - — Powered by Matrox MGA-G200 chip.
- Full AGP 2X (133 MHz-533 MB/s bandwidth) support.
- Integrated 250 MHz RAMDAC.
- DDC2B support for Plug-&-Play detection of monitor.
- 128-bit dual bus architecture.
- Dual command pipelining permits simultaneous read and write operations.
- Vibrant color-true 32-bit ARGB.
- Acceleration for Direct3D applications.
- Supports 32-bit Z buffering for exceptional rendering precision.
- Multimonitor support with several cards.
- 16/10 monitor support.
- MPEG-2 decompression upgradability (with accessory available from Matrox).

Graphics memory

- 8 MB SGRAM video memory, upgradable to 16 MB (with HP 8 MB SGRAM video memory accessory [D9527A]).

Available graphics drivers

- HP-tested Windows NT® Workstation 4.0 (preloaded).
- HP-tested Windows® 2000 Professional.
- Windows® 95, Windows® 98.

Drivers may be preloaded, provided on CD-ROM, or available from HP Kayak Support Web site: www.hp.com/go/kayaksupport

Resolutions

- Supports the following maximum non-interlaced refresh rates at the resolutions listed here:

Resolution	256 colors (8-bit)	32K colors (16-bit)	True color/16.7M colors (24-bit)	True color/16.7M colors (32-bit)
640 x 480	60–200Hz	60–200Hz	60–200Hz	60–200Hz
800 x 600	60–180Hz	60–180Hz	60–180Hz	60–180Hz
1024 x 768	60–140Hz	60–140Hz	60–140Hz	60–140Hz
1152 x 864	60–120Hz	60–120Hz	60–120Hz	60–120Hz
1280 x 1024	60–100Hz	60–100Hz	60–100Hz	60–90Hz
1600 x 1200	60–90Hz	60–90Hz	60–85Hz	60-65Hz
1920 x 1200	60–76Hz	60–76Hz	60–70Hz	–
1800 x 1140	60–70Hz	60–70Hz	60–65Hz	–

MATROX MILLENNIUM G400 DUAL GRAPHICS

Graphics processor

- Matrox Millennium G400 Dual graphics card installed in AGP slot:
  - — Best 2D graphics performance.
  - — Dual-monitor support in a single AGP slot.
  - — Best professional DirectX graphics for office.
- Powered by Matrox MGA-G400 chip.
- Full AGP 2X/AGP 4X support (up to 1 GB/s bandwidth).
- Integrated 300 MHz RAMDAC with Ultra Sharp technology for highly saturated and separated colors.
- Matrox DualHead Display technology with PowerDesk desktop manager:
  - — Easy multiple resolutions support.
  - — Simple dialog-box control.
  - — Effortless multiple-window management.
- DDC2B support for Plug-&-Play detection of monitor.
- 256-bit dual bus architecture; true 128-bit external bus to video memory.
- Vibrant color quality-true 32-bit ARGB.
- Supports 32-bit Z buffering for exceptional rendering precision.
- 32-bit internal precision specially enhanced for multi-texturing using 32-bit text sources.
- 16/10 monitor support.
- Support for 32-bit true color (16.7 million colors) at resolutions up to 2048 × 1536.
- Bilinear, trilinear, and anisotropic filtering.
- Floating-point 3D setup engine.
- DirectX 6 hardware acceleration.

Graphics memory

- 16 MB SGRAM video memory (non-upgradable).

Available graphics drivers

- HP-tested Windows NT® Workstation 4.0 (preloaded).
- HP-tested Windows® 2000 Professional.
- Windows® 95, Windows® 98.

Drivers may be preloaded, provided on CD-ROM, or available from HP Kayak Support Web site:
www.hp.com/go/kayaksupport

Resolutions

2D resolutions and 3D resolutions

- This graphics subsystem supports the following maximum resolutions and colors:

Color Palette	Maximum 2D display area	Maximum 3D display area	Double-buffered+ 16-bit Z	Double-buffered+ +32-bit Z
8-bit	2048 x1536	–	–	–
15- or 16-bit	2048 x1536	2048 x1536	1800 x 1440	1600 x 1200
24-bit	2048 x1536	–	–	–
32-bit	2048 x1536	1600 x 1200	1280 x 1024	1280 x 1024

Refresh rates

- Supports the following maximum non-interlaced refresh rates and the resolutions listed here:

		Primary screen (8-/16-/24-/32-bit)	Secondary screen (16-/32-bit)
4:3 aspect ratio	640 x 480	200Hz	200Hz
	800 x 600	200Hz	180Hz
	1024 x 768	160Hz	115Hz
	1280 x 1024	120Hz	75Hz
	1600 x 1200	100Hz	43Hz
	1600 x 1280	90Hz	43Hz
	1800 x 1440	80Hz	–
	1920 x 1440	75Hz	–
	2048 x 1536	70Hz	–
16:9 aspect ratio	1600 x 1024	120Hz	43Hz
	1920 x 1035	100Hz	–
	1920 x 1080	100Hz	–
	1920 x 1200	90Hz	–

ELSA SYNERGY II GRAPHICS

Graphics processor

- ELSA Synergy II graphics card installed in AGP slot:
  - — Excellent professional OpenGL 3D graphics performance.
  - — Industry-leading AutoCAD™ 2D and 3D graphics.
  - — Professional 2D graphics performance.
- Features Riva TNT2 graphics engine from NVIDIA
  - — Outstanding 2D and 3D OpenGL and DirectX support.
  - — Full AGP 2X/AGP 4X support (up to 1 GB/s bandwidth).
  - — ELSA Software Advantage with POWERdraft driver and ELSAView 3D for AutoCAD™ release 141 and MAX-Treme for 3D Studio MAX.
- Integrated 300MHz RAMDAC for better ergonomics at all resolutions
  - — Plug-&-Play DDC2B support.
  - — 16/10 monitor support.
  - — Multimonitor support with additional PCI cards (available from ELSA).
- OpenGL hardware features:
  - — Gouraud shading.
  - — Alpha blending for transparency.
  - — Anti-aliasing (software-enabled).
  - — Fog.
  - — Stencil support.
- Hardware texture acceleration:
  - — Texture memory shared with frame buffer memory.
  - — Outstanding trilinear filtered texture mapping performance (up to 125 Mpixels/s).
- Single-pass multitexturing support.

Graphics memory

- 32 MB SGRAM:
  - — 32 MB frame buffer/texture memory.
  - — 32-bit true color, double buffered.
  - — 32-bit Z-buffer or 24-bit Z-buffer + 8-bit stencil.
  - — Memory for texture mapping shared with frame buffer memory.

Available graphics drivers

- HP-tested Windows NT® Workstation 4.0 (preloaded)
- OpenGL 1.1 Installable Client Driver (ICD) (preloaded)
- Windows® 2000 Professional ICD and DirectX 6 drivers
- Windows® 95 and Windows® 98 DirectX 5 and 6 drivers
- AutoCAD™ rev. 14 ELSA POWERdraft display list driver for Windows NT® 4.0
- ELSAview 3D for visualization of 3D models with AutoCAD™ R14.01, Autodesk Mechanical Desktop, Autodesk Architectural Desktop, or as standalone application (VRML 1.0, Open Inventor) under Windows NT®
- ELSA MAXtreme driver for enhanced performance and productivity with 3D Studio MAX/VIZ R2x and R3x

Drivers may be preloaded, provided on CD-ROM, or available from HP Kayak Support Web site: www.hp.com/go/kayaksupport

Resolutions

- 3D resolutions (True-color double buffer)—HP Ergonomic Modes support these non-interlaced 2D resolutions for Windows NT® Workstation 4.0, Windows® 2000, Windows® 95, and Windows® 98:

Resolution	256 colors (8-bit)	64K colors (16-bit)	True color/16.7M colors (32-bit)
640 x 480	60–200Hz	60–200Hz	60–200Hz
800 x 600	60–200Hz	60–200Hz	60–200Hz
1024 x 768	60–200Hz	60–200Hz	60–200Hz
1280 x 1024	60–170Hz	60–170Hz	60–170Hz
1600 x 1000	60–139Hz	60–139Hz	60–139Hz
1600 x 1200	60–116Hz	60–116Hz	60-116Hz
1920 x 1080	60–107Hz	60–107Hz	60–107Hz
1920 x 1200	60–96Hz	60–96Hz	60–96Hz

ELSA GLORIA II GRAPHICS

Graphics processor	• HP VISUALIZE technology improves Pro-E performance up to 20%. • Quadro by nVIDIA graphics processor. • Integrated 300 MHz RAMDAC for flicker-free display (over 2.4 GB/s). • DDC2B support for plug-and-play detection of monitor. • 66 MHz AGP 2x/4x bus system (4x only supported by special mainboard chipsets). • Flash BIOS with VBE 3.0 support. • Application drivers for AutoCad™ and 3D studio MAX/VIZ. • Four independent 3D rendering pipelines for maximum performance. • One VGA D-shell socket (15-pin). • Single AGP board, ATX bracket.
Graphics memory	• 64 MB SDRAM (up to 166 MHz controller clock nominally).
Available driver features	• ELSA Info Provides the ability to find information on your computer system, the DirectX and OpenGL driver versions, and the installed ELSA software. • ELSA Diagnostics Lets you quickly and reliably check for hardware defects. • ELSA ColorControl Permits the optimal adjustment of the color and brightness of your monitor. • ELSA AppSet Allows setting adjustment for ISV applications. This feature is part of the control panel which is automatically installed.
Tools for AutoCad™	• ELSA POWERdraft Is one of the most powerful productivity enhancement tools for AutoCad™ for Windows® that doubles the performance. Integrated into the AutoCad™ environment, POWERdraft driver offers significant improvement over existing driver technology, and is an extremely fast and reliable driver platform for AutoCad™: — ELSA POWERdraft hardware renderer. — MultiView. — Cockpit. • ELSAview 3D viewer for AutoCad™: Is a tool for observing complex 3D objects and scenes. It can be run either as a stand-alone program, or in conjunction with AutoCad™. Because ELSAview 3D can read the major 3D import formats, it is able to import data from other CAD applications. • ELSA MAXtrem: For 3D studio max digital content creation that takes full advantage of the graphics chips capabilities allowing you to reach higher display speeds.
Resolutions	• The following resolutions are supported:

Resolution	Color Depth	Refresh Rate
640 x 480	8-bit, 16-bit, true color	Up to 200Hz
800 x 600	8-bit, 16-bit, true color	Up to 200Hz
1024 x 768	8-bit, 16-bit, true color	Up to 200Hz
1152 x 864	8-bit, 16-bit, true color	Up to 196Hz
1280 x 1024	8-bit, 16-bit, true color	Up to 176Hz
1600 x 1000 (16:10 wide format monitors)	8-bit, 16-bit, true color	Up to 162Hz
1600 x 1200	8-bit, 16-bit, true color	Up to 135Hz
1600 x 1280	8-bit, 16-bit, true color	Up to 127Hz
1792 x 1120	8-bit, 16-bit, true color	Up to 129Hz
1920 x 1080	8-bit, 16-bit, true color	Up to 125Hz
1920 x 1200 (16:10 wide format monitors)	8-bit, 16-bit, true color	Up to 113Hz
2048 x 1536	8-bit, 16-bit, true color	Up to 85Hz

3DLABS OXYGEN GVX1 GRAPHICS

Graphics processor	• 3Dlabs Oxygen GVX1 OpenGL graphics card installed in AGP slot: — Outstanding graphics solution for expert OpenGL 3D modeling and visualization for 3D MCAD designers, 3D animation creators, and engineers in geosciences who deal with large data sets. — Integrated geometry acceleration. — Up to 256 MB of host memory used as a virtual texture store. • GLINT R3 rasterization processor: — "Virtual texture" memory management unit. — 256 MB virtual texture address space. — Single-pass, multitexture texture unit. — Integrated 300 MHz RAMDAC. — High-speed 128-bit memory interface. — 7 independent DMA engines. — 2D/3D raster engine. — Integrated SVGA controller. • GLINT Gamma G1 geometry processor: — 100% OpenGL transformation and lighting. — Hardwired processor provides three times the geometry performance of a Pentium® III processor. — 16 simultaneous light sources. — 4.75 million lit, transformed triangles/second. • PowerThreads SSE OpenGL drivers: — PowerThreads SSE OpenGL ICD with full Pentium® III SSE optimizations. — "Dynamic load balancing" balances geometry and lighting between GLINT Gamma G1 and host CPUs. — OpenGL 1.1 ICD (1.2 ready). — Multiprocessor system optimized. • Professional 3D rendering: — Complete OpenGL 1.2 functionality in silicon. — Virtual texturing in silicon. — Up to 256 MB texture space. — 2048 × 2048 × 32 bits maximum individual texture size. — Single-pass bump mapping, per-pixel lighting. — Gouraud shading. — Correct-perspective bilinear and trilinear filtering. — Correct-perspective per-pixel MIP mapping. — Single-pass dual bilinear MIP-mapped textures. — Volumetric rendering with up to eight-way filtering. — Source and destination alpha blending. — Fogging and depth cueing. — Anti-aliased lines and polygons. — Scissoring and stippling. — Overlay and stencil buffers. — 32 bit Z-buffering. — GID clipping. • Display: — True-color resolutions up to 1920 × 1200 or 2048 × 1536 double-buffered and 32-bit Z. — 60 Hz-120 Hz screen refresh rates. — Softimage-compliant, eight-bit, double-buffered overlay planes. — DDC2B support on all operating systems. • Multihead capable: — Drive up to 8 displays using multiple additional PCI Oxygen VX1 and PCI Oxygen GVX1 boards (available from 3Dlabs).

3DLABS OXYGEN GVX1 GRAPHICS

Graphics processor

- Stereo support:
  - — True quad-buffered stereo support up to 1280 × 1024 true color, 118 Hz refresh rate.
- Digital flat panel output:
  - — MDR-20 (DFP) output connector, supporting digital flat panels up to 1280 × 1024 at 60 Hz refresh rate.
- Drivers:
  - — Windows NT® 4.0 and PowerThreads SSE OpenGL ICD.
  - — Windows® 95/98, DirectX 6, and PowerThreads SSE I OpenGL ICD.
  - — Multithreaded and Thread Safe.
  - — Windows® 2000 Professional ready.
- Advanced control panel:
  - — Automatically optimizes system configuration for each professional application.
- Value-added software bundles:
  - — Soft Engine 4—up to 400% AutoCAD™ performance boost.
- Video-bilinear filtered rescaling:
  - — Hardware YUV-RGB conversion.
  - — Hardware MPEG-2 motion compensation.
- Connectors:
  - — DB-15 analog connector.
  - — 3-pin mini-DIN stereo connector.
  - — MDR-20 DFP digital flat panel connector.
  - — AGP 2X support.

Graphics memory

- 32 MB SGRAM video memory:
  - — 32 MB of unified SGRAM frame buffer, Z-buffer, and texture memory.
  - — 32-bit true color, double buffered.
  - — 32-bit Z buffer.
  - — 4-bit Windows® ID.
  - — 8-bit overlay planes DB.
  - — 8-bit stencil planes.
- Up to 256 MB of host memory used as a virtual texture store

Available graphics drivers

- HP-tested Windows NT® Workstation 4.0 (preloaded).
- PowerThreads Pentium® III SSE OpenGL 1.1 ICD (installable client driver) (preloaded).
- Windows® 2000 Professional OpenGL 1.1 ICD (1.2 ready) and DirectX 6.
- Windows® 95/98, DirectX 6, and PowerThreads SSE I OpenGL ICD.
- AutoCAD™ rev 14 Soft-Engine 4 driver.
- Drivers may be preloaded, provided on CD-ROM, or available from HP Kayak Support Web site: www.hp.com/go/kayaksupport

Resolutions

- The following resolutions are supported:

Resolution	256 colors (8-bit)	64K colors (16-bit)	True color/16.7M colors (32-bit)
640 x 480	60/75/85/100Hz	60/75/85/100Hz	60/75/85/100Hz
800 x 600	60/75/85/100Hz	60/75/85/100Hz	60/75/85/100Hz
1024 x 768	60/75/85/100Hz	60/75/85/100Hz	60/75/85/100Hz
1152 x 864	60/75/85/100Hz	60/75/85/100Hz	60/75/85/100Hz
1280 x 960	60/75/85/100Hz	60/75/85/100Hz	60/75/85/100Hz
1280 x 1024	60/75/85/100Hz	60/75/85/100Hz	60/75/85/100Hz
1600 x 1200	60/75/85/100Hz	60/75/85/100Hz	60/75/85/100Hz
1920 x 1080	60/75/85/100Hz	60/75/85/100Hz	60/75/85/100Hz
1920 x 1200	76Hz	76Hz	76Hz
2048 x 1536	60Hz	60Hz	60Hz

SOFTWARE

Operating system support and certification	• HP-supported operating systems: Windows NT® Workstation 4.0, Windows® 2000 Professional, Windows® 95, Windows® 98. • HP-certified operating systems: SunSoft Solaris 2.7, Novell Client for Windows NT® 4.0 (compatible with Novell NetWare 3.x, 4.x, and 5 Server), TurboLinux 6.0, Red Hat Linux 6.1, Suse Linux 6.3, Caldera Linux 2.3.
Supplied software	• Windows NT® Workstation 4.0 or Windows® 2000 Professional: — Full support for Windows® 95 and Windows® 98. • Online documentation on support, performance benefits, product features, and use of PC. • HP DiagTools II hardware diagnostic software. • HP drivers. • HP Soft Power Down for Windows NT®. • Microsoft® Internet Explorer. • Netscape™ Communicator. • Some Open OS models available: — TurboLinux CD kit provided, not preloaded.

STABILITY

Software recovery	**Image Creation and Recovery CD-ROM** • Delivered with every HP Kayak PC Workstation, it is designed to help MIS or the end user to locally install, update, or recover: — The Windows NT® Workstation 4.0 or Windows® 2000 Professional operating systems. — All HP Kayak PC Workstation drivers. — HP licensed applications and utilities.

COMMUNICATION FEATURES

Ethernet LAN interface	• 32-bit autosensing HP PCI 10/100 Base-T Ethernet adapter (standard on all models; also available as an optional accessory).
Media connection	• Single RJ-45 connector for 100 Base-TX and 10 Base-T.
LED indicators	• Three LED (light-emitting diode) indicators: 10M link, 100M link, and network activity.
Manageability	• LAN Remote Power On/Off and remote wake-up support. • Wired for Management (WfM) 2.0 compliant.
Network administration guide	• Online information on network setup in all supported environments.
Easy driver updates	• Latest LAN information and drivers for HP PCI 10/100 Base-T Ethernet adapter available from HP Kayak Support Web site: www.hp.com/go/kayaksupport
Network client certification	• Certified to run as a client in Microsoft® and Novell network operating system environments.
Internet ready	• Microsoft® Internet Explorer 5.x. • Netscape™ Communicator 5.x.
Available LAN driver support	• Novell NetWare 3.1x, 4.x, 5.0 • Novell LAN Analyzer for NetWare • NCSA TCP/IP • Microsoft® Windows® for Workgroups v3.11 • Microsoft® Windows NT® • Microsoft® Windows® 95/98/2000 • IBM LAN Server 2.x, 3.x, 4.x • IBM LAN Support, IBM DOS Requester • FTP PC/TCP • IBM TCP/IP for DOS and OS/2 • OS/2 Warp 4.0

LOWER COST OF OWNERSHIP

Ergonomic environment	• Low-noise, variable-speed fans for temperature control. • Ergonomic video modes supporting non-interlaced resolutions up to 1800 × 1440 and refresh rates up to 200 Hz (Matrox Millennium G250 models); non-interlaced resolutions up to 2048 × 1536 and refresh rates up to 200 Hz (Matrox Millennium G400 Dual models); non-interlaced resolutions up to 1920 × 1200 and refresh rates up to 200 Hz (ELSA Synergy II models); or non-interlaced resolutions up to 100 Hz and refresh rates up to 2048 × 1536 (3Dlabs Oxygen GVX1 models). • HP Master Key lock. • EPA ENERGY STAR® certified. • HP UltraFlow cooling technology. • Large selection of MPRII—and EPA ENERGY STAR®—certified displays. • CFC-free manufacturing process; single plastic for easy recycling. • Supports HP Keyboard Start and LAN Remote Power On/Off. ***Note:*** As an ENERGY STA®R partner, HP has determined that this product meets the ENERGY STAR® guidelines for energy efficiency (Windows® 2000 models).
Maximized uptime	• HP MaxiLife—the industry's first proactive local PC hardware management and diagnostic system: — A dedicated chip that monitors key system elements of the PC Workstation—including power supply, CPUs, motherboard, memory, information storage devices, fans, and even Windows NT®—to ensure that they are operating within system specifications, including temperature and voltage. — Takes action to prevent system failure when possible—for example, can adjust speed of fans to remedy temperature problems. — Blink-system LED notifies user immediately when a problem is detected. — Temperature, fan and alarm control in HP TopTools. — Dedicated, screen-independent backlit LCD on front panel displays description of problem to expedite repair and consequent return to productivity; delivers component-level diagnostics even when a critical system failure—such as failure of CPU, memory, or system clocks—has occurred, reducing downtime even in these cases — HeartBeat informs user whether Windows NT® is running—ideal for developers running compilations and designers or financial experts running analysis or rendering of large datasets. — Access to the LCD from Windows NT® enables end users to customize the information displayed—ideal for non-screen environments. — Info section for fast access at any time to key system configuration information such as product name, BIOS version, serial number, processor type and number, and memory configuration. — Diagnostics section is the ideal complement for DiagTools, the diagnostic application component of HP TopTools. • HP UltraFlow cooling technology—uses three fans to ensure that internal components (processors, hard disk drive, expansion cards) are always kept at a safe temperature for maximum reliability.
Serviceability/Ease of setup nd service	• Simplified service: all components easily accessible and replaceable: — Fast chassis removal; no screwdriver needed. — Fast removal of power supply for unobstructed access to system board. — Fast slide-out of system board. • BIOS stored in flash EEPROM for fast and easy upgrades. • Setup program in flash ROM. • Automatic detection of major components at power-on. • Power-On Self-Test (POST) displays start-up errors; suggests solutions.
Warranty	• Three-year on-site international limited hardware warranty, and a full range of flexible warranty options. ***Note:*** For full details, see HP hardware warranty statement provided with your hardware. Warranty terms can be changed up to 90 days after purchase upon customers request.
Support	**24 hours a day, 7 days a week, there is always a way to reach HP Support:** • Web technical support including BIOS and driver updates, white papers and additional product information. • HP three-year free hardware diagnostic phone support (24 hours a day, 7 days a week in U.S. Standard business hours in other regions). For more information, go to http://www.hp.com/go/support and click on Assistance to find the telephone number of the HP Customer Care Center near you.

MANAGEABILITY

Inventory management	**Remote and central inventory** • Auto-discovery of devices. • Automated collection of inventory (Attributes depend on PC's DMI implementation). • PC search and selection. • Standard reports (including asset location, configuration). • Report of Year 2000 ready HP PCs. • Report of Microsoft® Windows® 2000–ready PCs. Report includes PCs that match the minimum hardware requirements and are certified. • Access to detailed configuration information. • Customizable asset string.
Configuration management	**Remote boot control** • Scheduled system reboot. • Scheduled system power-off. • System power-on. **Remote and central system software updates** • HP TopTools Agent deployment and updates. Agent Deployment is only available with Windows NT® Workstation, within the same Windows NT® domain. • BIOS updates. • Drivers updates (video, hard disk drive, and LAN card). • Installation of selected HP LaserJet printers. • Hardware diagnostics deployment and update (HP DiagTools).
Fault management	**Local fault diagnostics** • Hardware diagnostics (HP DiagTools). • Smart card and smart card reader diagnostics. • LAN card diagnostics (with 3Com card only). **Remote and local alert reporting** • Power-On Self-Test (POST). • Chassis intrusion detection. • IDE hard disk drive SMART failure warning. • Virus detection. • Fan speed monitoring. • Voltage monitoring. • Temperature monitoring. **Remote access to status information** • Network interface status and activity. Requires HP TopTools Value Pack (D7160A). • Network interface statistics.[1] • Services.[2] • Current processes.[2] • Device driver.[2] • Memory utilization.[2] • Logical drives utilization.[2] ***Note 1:*** Attributes Requires that SNMP services be installed. ***Note 2:*** Requires that WBEM/WMI services be installed.

MANAGEABILITY

Security Management	**Remote and central system boot configuration** • Enable/Disable start from hard disk. • Enable/Disable start from floppy disk. • Enable/Disable start from CD-ROM drive. • Enable/Disable Wake on LAN and modem **Remote and central security configuration** • Enable/Disable floppy disk drive. • Enable/Disable writing on floppy disk drive. • Enable/Disable serial and parallel ports. • Enable/Disable USB ports. • Enable/Disable write to hard disk boot sector. **Remote and central security control** • Complete system lock. • System protection (power-on and reset buttons). **Remote and central security management** • System administrator and user password change. • Enable/Disable user password on power-on. • System SNMP community password change (requires that SNMP services be installed). • Report of PCs not password protected. **Security management** • Inventory of smart card readers. • Local diagnostic of smart card and reader.
Compliance with Industry Standards	**Desktop Management Interface (DMI)** • Provided with TopTools Agent for Windows® 9x and NT 4.0 models. HP PCs have the most comprehensive DMI implementation in the industry: — DMI 2.0s compliant. — HP DMI instrumentation for PC system information, monitor, LAN cards, security, devices, drivers, bios, end-user information and more ... — Support for all DMI management application including Intel LANDesk, McAfee ZAC and more ... • HP TopTools can uniquely: — Read DMI information from HP and non-HP PCs. — Report DMI alerts from HP and non-HP PCs. — Control DMI hardware monitoring from HP and non-HP PCs. **Windows® Management Interface (WMI)** • Provided with TopTools Agent for Windows® 2000 models. HP PCs have the industry leading WMI implementation: — Full WMI instrumentation (equivalent to DMI). — Common TopTools agent and WMI instrumentation across Vectra, Kayak, Omnibook and e-PC. • First to implement WMI instrumentation for Intel® IPSEC LAN card adaptors, HP TopTools can uniquely: — Read WMI information from HP and non-HP PCs. — Control DMI hardware monitoring from HP and non-HP PCs. **Wired for Management (WfM)** • HP PCs are WfM 2.0 ready: — Provide easy remote power-on (RPO/WOL), remote power-off, remote reboot. • HP PCs are PXE 2.0 ready: — Provide easy Windows 2000 Workstation software deployment with Windows® 2000 remote installation service.

MANAGEABILITY

Performance Management	**Resource monitoring and alerting** • CPU. • Memory. • Hard disk drives. • Network interface card.
Additional HP TopTools products	• HP TopTools Value Pack expands the functionality of the free version of HP TopTools by including: — System Performance Advisor—CPU, memory, and disk I/O performance monitoring and trend analysis for Windows NT®, Windows® 95, and Windows® 98 systems. — PC remote control (Symantec pcANYWHERE). — Custom reports and tables. — Enhanced notification actions and action triggers. — Most frequent alerts report. — Third-party trap import/configuration. — IP/MAC address file importing. — Enhanced HP TopTools user password administration. — Enhanced action on alerts (e-mail and paging). — Support for larger environments (up to 5,000 nodes per device manager server). • HP TopTools bridges enable full integration with complementary applications. Bridges are available with the following applications: — HP OpenView Network Node Manager (NNM) (Windows NT®). — HP OpenView NNM (HP-UX). — HP OpenView NNM (Solaris). — IBM Tivoli NetView (Windows NT®). — Computer Associates Unicenter TNG (Windows NT®).

SPECIFICATIONS

Physical Characteristics

- System dimensions (metric): 21.0 cm x 47 cm x 49 cm (without keyboard)
- System dimensions (non-metric): 8.26 inches wide x 18.5 inches deep x 19.3 inches high (without keyboard)
- System weight (metric): 14.4 kg (without keyboard)
- System weitht (non-metric): 31.7 lb (without keyboard)
- Keyboard dimensions (metric): 47.5 cm x 18.5 cm x 5.0 cm (7.3 cm standing)
- Keyboard dimensions (non-metric): 19.0 inches wide x 7.4 inches deep x 2.0 inches high flat (2.9 inches standing)

Acoustic Emission

- Sound level: (LwA) <44 dBA.

Environmental Conditions

- Operating temperature (metric): 10° to 35° C.
- Operating temperature (non-metric): 40° to 95° F.
- Non-operating temperature (metric): -40° to 70° C.
- Non-operating temperature (non-metric): -40° to 158° F.
- Operating humidity: 15% to 85% RH (non-condensing).
- Non-operating humidity: 8% to 85% RH (noncondensing) at 104° F (40° C).
- Operating altitude (metric): 3,100 m.
- Operating altitude (non-metric): 10,000 ft.
- Non-operating altitude (metric): 4,600 m.
- Non-operating altitude (non-metric) 15,000 ft.

Note: Operating temperature and humidity range may vary with data storage device and altitude.

Electrical Characteristics

Input Voltage

- 100 to 127 VAC or 200 to 240 VAC over 45 Hz to 50 Hz to 60 Hz.

Power Availability

- 300 W continuous.

Power Consumption

- Full power mode (maximum): 300 W (minitower).
- Typical consumption with one processor: approximately 70 W.
- Typical consumption with two processors: approximately 110 W.

Regulatory Compliance and Approvals

Safety Approvals

- FCC Part 15 Class B (USA).
- ICES-003 Class B (CANADA).
- European EMC directive 89/336/EEC amended by Directive 93/68/EEC.
- GB 9254-1998 (CHINA).
- VCCI Class B (JAPAN).
- RRL Class B (KOREA).
- AS/NZS3548 Class B (AUSTRALIA- NEW ZEALAND).
- BSMI CNS13438 Class B (TAIWAN).
- BALTIC and EASTERN countries Compliance.
- CISPR 22: 1993 (International).

Electromagnetic Compatibility

- CSA C22.2 No. 950-M89 (Canada).
- UL 1950 listed (USA).
- NOM -019-SCFI-1994 (MEXICO).
- IEC 60950: 1991 + A1+A2+A3+A4 (International).
- 73/23/EEC Low Voltage Directive amended by Directive 93/68/EEC.
- EN 60950: 1992 +A1+A2+A3 +A4 +A11.
- TÜV-GS Mark (GERMANY).
- PSB (SINGAPORE).
- GB4943 - 1995 (CHINA).
- BALTIC and EASTERN countries Compliance.

Ergonomics

- GS Mark.

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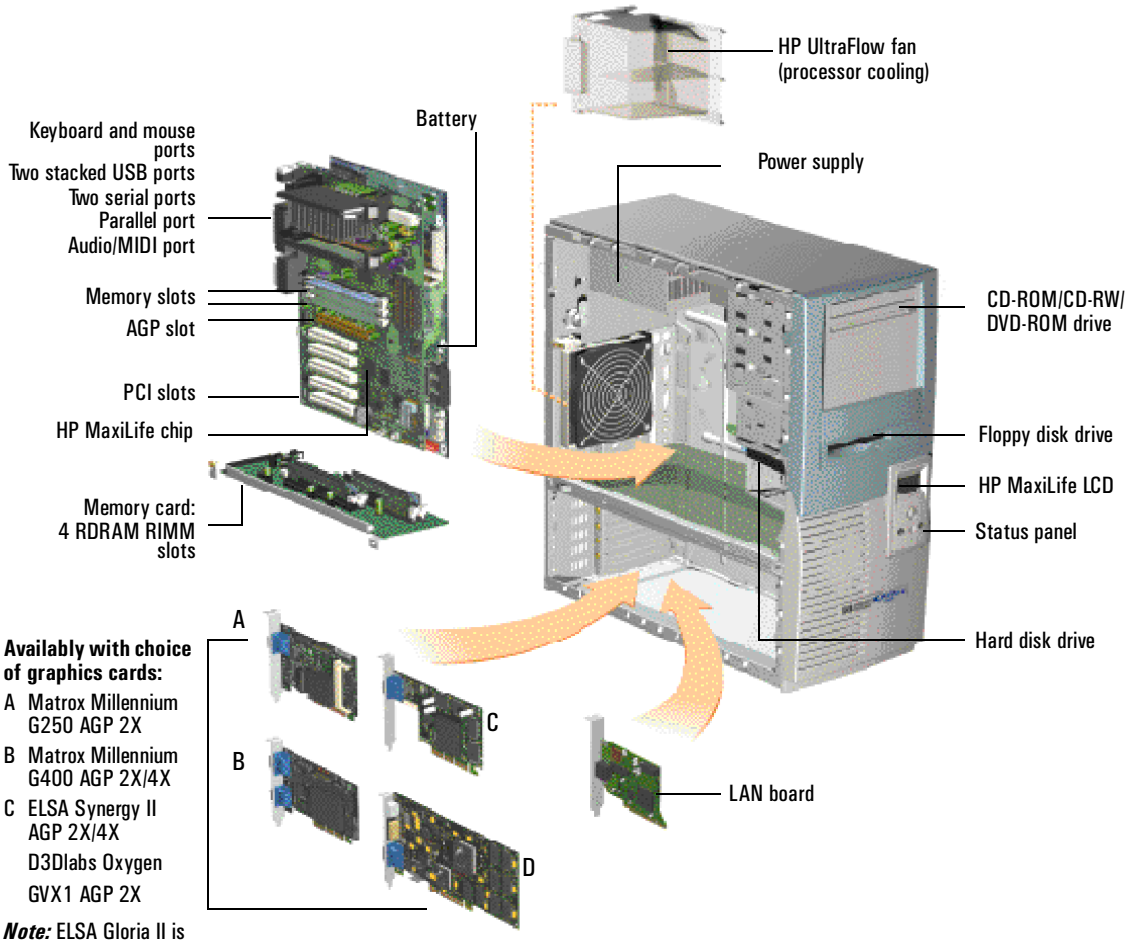
INTERNAL VIEW



Availably with choice of graphics cards:

A Matrox Millennium G250 AGP 2X

B Matrox Millennium G400 AGP 2X/4X

C ELSA Synergy II AGP 2X/4X

D3Dlabs Oxygen GVX1 AGP 2X

Note: ELSA Gloria II is not shown in the graphic.